MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016/2017

BTQ3094 – TQM FOR MANAGERS

(All sections / Groups)

10 OCTOBER 2016
2.30PM – 4.30PM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **NINE (9)** printed pages, excluding the cover, with:
   Section A: Fifteen (15) multiple choice questions; QA1-10 are worth 2 marks each; QA11-15 are worth 4 marks each. (40 marks)
   Section B: Four short-answer questions; QB1 and QB2 are worth 20 marks each; QB3 and QB4 are worth 10 marks each (Total 60 marks)

2. Answer **Section A** on the MCQ Answer Sheet provided. All answers to **Section B** should be printed in the Answer Booklet.

3. You are permitted to use a non-programmable calculator during this examination.

4. Marks allocations are provided for each question.

SECTION A: MULTIPLE CHOICE QUESTIONS (40 marks)

Section A is to be answered in the MCQ Answer Sheet.

Read each of the items below carefully and then indicate the most appropriate response on your Answer Sheet. Questions 1 to 10 are worth 2 marks each. Questions 11 to 15 are worth 4 marks each. Total: 40 marks.

Please note: Questions 1-10 are worth 2 marks each.

1. How many product dimensions are defined in David Garvin's framework for studying quality?

   a. 4
   b. 5
   c. 8
   d. 12

2. Which of the following statements is true?

   a. A service can consist of a product or a good.
   b. A process is stable if individual products consistently meet specifications
   c. In quality management, the probability that a nonconforming product will be available for sale is generally regarded as a Type II error.
   d. The four stages in designing a Customer Benefits Package (CBP) are: (i) idea or concept generation; (ii) defining the services package; (iii) developing a viable complaints resolution strategy; (iv) communicating CBP components to all relevant stakeholders.

3. In a _____ sample of items produced on a factory assembly-line, each item produced has an equal chance of being selected for inspection.

   a. systematic time series
   b. random
   c. rational sub-group
   d. process variation

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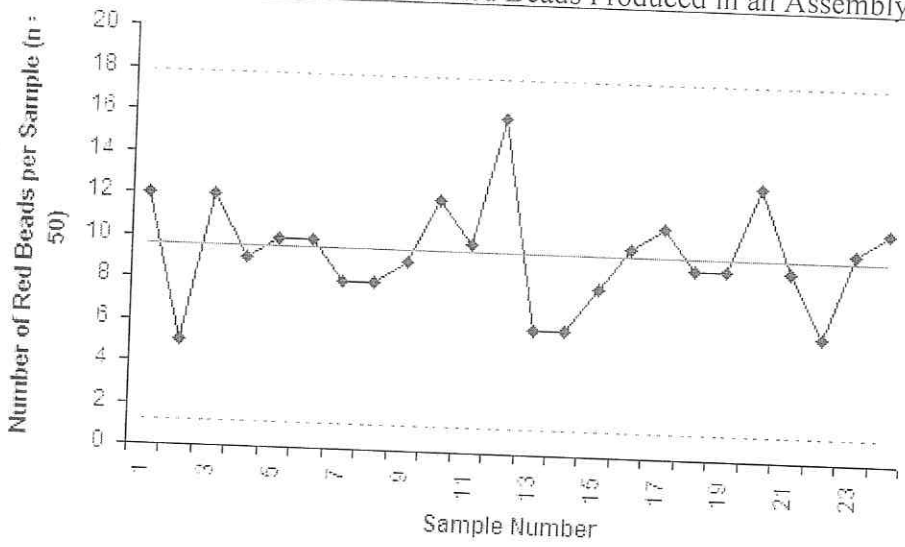
Use Diagram 1 to answer Question 3:

Diagram 1 – The Number of Defective Red Beads Produced in an Assembly Line



4. A quality management specialist would most likely refer to Diagram 1 as _____.

   a. an *np* chart
   b. a graphical representation of the number of defects in each sampled batch
   c. a part/function diagram
   d. both (a) and (b)

5. The Operations Manager writes an e-mail to all production supervisors which states that, "any workstation operator who does not maintain an assembly-failure rate below 7% will be re-assigned to a new station with an immediate reduction in salary and loss of Annual Leave entitlements. We are serious about quality from now on." Which form of leadership power is the Operations Manager exercising?

   a. Coercive
   b. Reward
   c. Referent
   d. Expert

Continued...

6. In the study of quality management, the acronym "PZ&B" is frequently seen. What word does the "P" stand for?

   a. Packaging
   b. Parasuraman
   c. Poka-yoke
   d. Partial

7. A firm that is ISO14001-compliant is _____.

   a. European
   b. cost-efficient
   c. environmentally conscious
   d. fair to employees

8, Which of the following is NOT true about Total Quality Control Theory?

   a. It is based on a three-step process to improving quality: quality leadership, quality technology and organizational commitment.
   b. It warns against the "four deadly sins" of over-production, wasteful thinking, confining production to the factory and local production.
   c. It was proposed by Armand Feigenbaum who identified 19 steps to product quality emphasizing integration and accurate use of statistical sampling tools.
   d. Organizational commitment and inclusion of all supervisory and functional levels are emphasized.

9. In an attempt to improve delivery service quality, a furniture company installs a more powerful GPS (Global Positioning System) receiver in each of its trucks to enable drivers to follow the fastest and most direct route to delivery destinations. Upon measurement, the cost of delivery was reduced by an impressive 28%. Which of the following would accurately describe this company's initiative?

   a. It is a Baldridge approach to an ISO9001 recertification requirement.
   b. It is a Customer Benefits Package (CBP).
   c. It would be considered a means for avoiding Shingo's *waste of transportation.*
   d. None of the above.

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Use Diagram 2 to answer Question 10.

Diagram 2 – Start Up Problems

10. Irene Lee and her management team at 88 Enterprises have just opened a new outlet for home delivery of tailored clothing and accessories. Using a computer application known as Lucidchart, they create Diagram 2 to help identify the problems most deserving of their attention. What type of graphical analysis are they using?

a. an affinity chart
b. an inter-relationship diagraph
c. a prioritization matrix
d. a process decision program chart

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Please note: Questions 11-15 are worth 4 marks each.

11. Tikus Bhd supplies sixteen (16) cheese vats (big round refrigerated chambers) for frozen pizzas sold to consumers in Cold Storage food stores. Since quality is a key component of the Cold Storage marketing strategy, it is essential that the vats for storing pizza cheese are reliable. All *Tikus Cheese Storage Vats* were tested for 120 hours continuously and only six (6) of them failed to keep the cheese at required temperature levels. Find the number of failures per hour (λ) incurred by this equipment and the Mean Time to Failure (MTTF) statistic.

    a. The failure rate is 0.01 and the MTTF is 0.16.
    b. λ = .003125 failures per hour and the MTTF is 320
    c. λ = [100 x R(T)/F(T), where R(T) = reliability of the cheese vat and F(T) = functionality of the cheese vat and MTTF is equivalent to 1- λ^2
    d. The failure rate is 0.001 but there are insufficient data provided in this question to graph the exponential equation needed to determine the MTTF.
    e. There are insufficient data provided in this question to calculate either λ or the MTTF, but the failure rate is approximately [R(F) = 100^2 x 2 = 20,000] per hour

Use Diagram 3 to answer Question 12.

Diagram 3: Process Mapping Symbols

(I) (II) (III) (IV)

12. Which of the following would be true if you were interpreting a process flowchart drawn with the VISIO computer program?

    a. I indicates the point in the process at which quality assurance testing takes place.
    b. II indicates the point in the process at which toxic waste might need to be removed from the manufacturing system and III indicates the point at an inspection of the process will be carried out.
    c. I indicates the beginning of a process and II indicates the end of the process.
    d. III indicates that the description of the process is continued somewhere else and IV indicates that a decision is necessary before the process can be continued.
    e. II indicates the point at which some chemical or ingredient needs to be added to the process and IV indicates the point at which the process ends.

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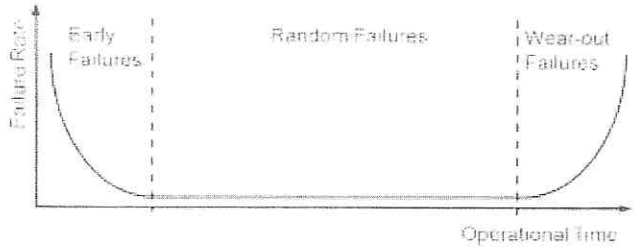
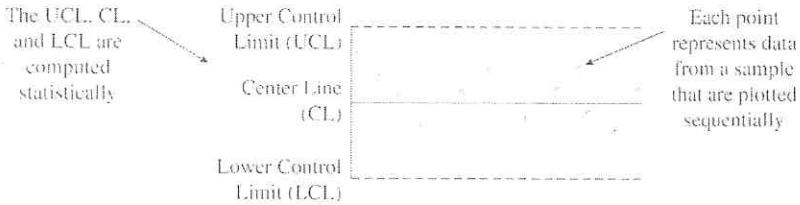
Use Diagram 4 to answer Question 13:

Diagram 4 – Five Graphical Relationships in Quality Management

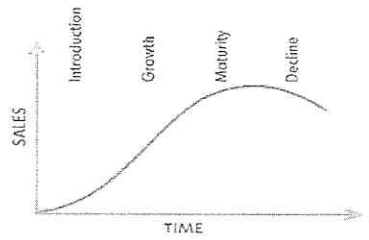
I.



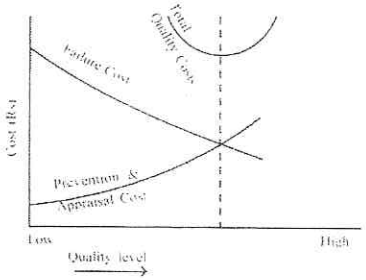
II.


The UCL, CL, and LCL are computed statistically
Upper Control Limit (UCL)
Center Line (CL)
Lower Control Limit (LCL)
Each point represents data from a sample that are plotted sequentially

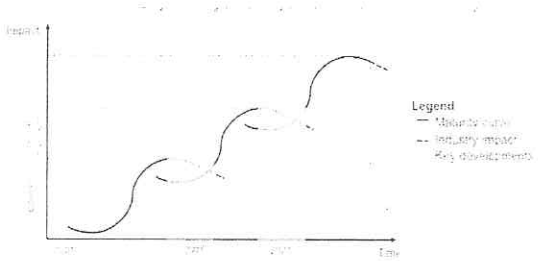
III.



IV.



V.



13. Which of the graphical relationships in Diagram 4 shows that products are most likely to fail either early or late in their useful lifetimes?

a. I
b. II
c. III and IV
d. IV and V
e. V

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14. Statements I through VIII are copied from a SERVQUAL questionnaire assessing the MPH bookstore outlet at D'Pulze shopping mall in Cyberjaya. Which of the following choices (a-e) is true?

I. When you have a problem with purchased items, MPH shows a sincere interest in solving it.
II. Excellent bookstores will have operating hours convenient to all their customers.
III. The employees at MPH are always willing to help you.
IV. MPH's physical facilities are visually appealing.
V. Employees of MPH understand your specific needs.
VI. Employees in excellent bookstores will give prompt service to customers.
VII. Employees in excellent bookstores will be consistently courteous with customers.
VIII. The behavior of employees at MPH instills confidence in you.

a. I measures customers' expectations for Empathy, and V measures customers' expectations for Empathy.
b. II measures customers' perceptions of Reliability, and VII measures customers' expectations for Assurance.
c. There are no statements which measure customers' perceptions, or expectations for, Tangibles.
d. III, VI and VIII all measure customers' perceptions.
e. II measures customers' expectations for Empathy, and VIII measures customers' perceptions of Assurance.

15. Which of the following pairs are mis-matched?
a. Juran Trilogy – Planning, Control, Improvement
b. Voice of the Customer – Mystery Shopper
c. Voice of the Industry – benchmarking
d. Forced Choice Model – strategic options
e. Business Process Re-engineering – W. Edwards Deming

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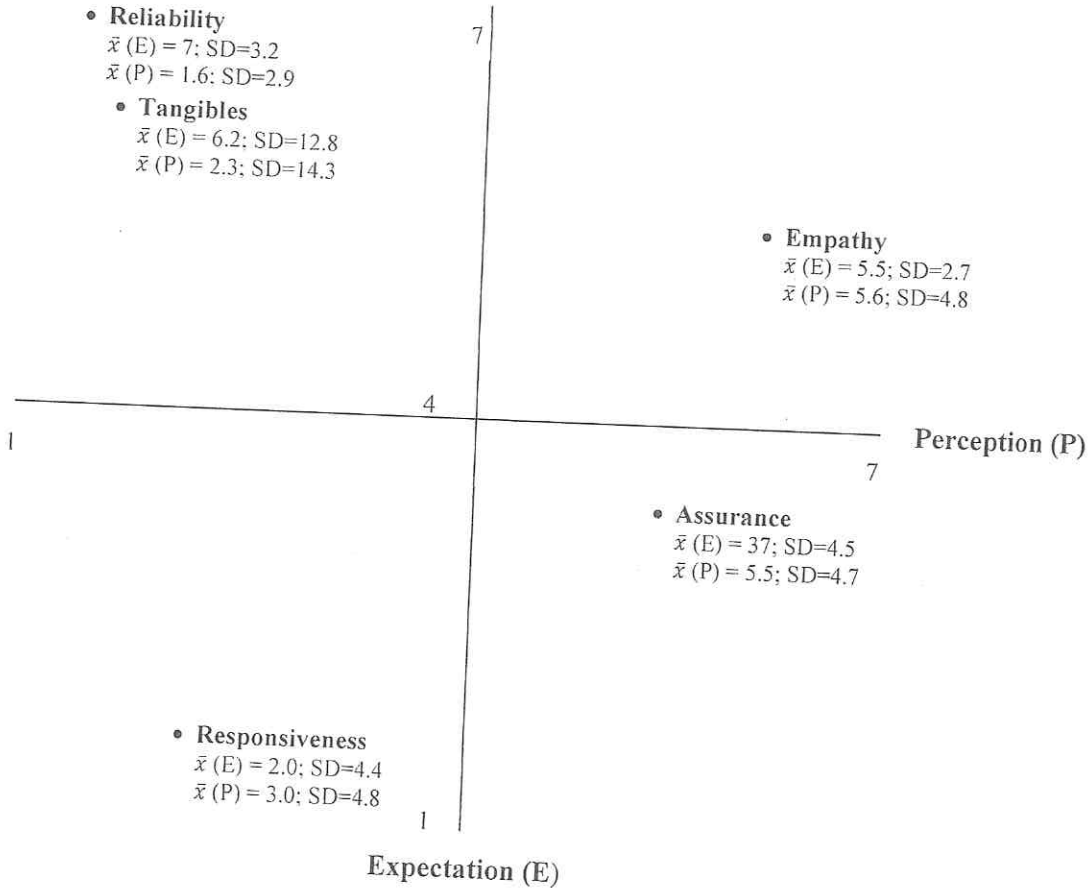
SECTION B: SHORT ANSWER QUESTIONS

1. Assume that you are the Store Manager at the MPH bookstore at D'Pulze shopping mall in Cyberjaya. Your head office has given you RM10,000 to carry out one project in the store that will increase perceived service quality. You assembled a team of senior staff and they completed a SERVQUAL analysis, using the standard 44-item questionnaire. Results have been graphed using a *two-dimensional differencing plane* format (see Diagram 5). Examine the findings presented in the graph below and tell what one project you would undertake, using the head office funds, to improve perceived service quality. Explain the reasons for your decision in detail. (20 marks)

Diagram 5 – Two-Dimensional Differencing for SERVQUAL Scores at MPH



where: $\bar{x}$ (E) = mean of customers' expectation scores;
$\bar{x}$ (P) = mean of customers' perception scores; and,
SD = standard deviation

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2. An adorable 14-year old boy named Kenny is trying to save money to buy a new basketball hoop to install on the side of his house. With his father's assistance, he sets up a roadside stall selling fresh iced lemon tea which he makes by himself, using a kettle, teapot and lemon squeezer. He chooses the least expensive teabags and lemons in order to keep his overhead costs low and his profits high. Likewise, he keeps costs low by using the refrigerator in his family kitchen to produce the ice.

   On the first day of his business, he has a steady stream of customers, each buying a single glass of iced lemon tea, and he is thrilled to be earning a clear profit. On the second day, a few new faces appear at his stall, but none of the buyers from his first day come back. For the rest of the week, his customers become fewer and fewer in number, with no repeat business at all. By the seventh day, his sales are no longer even breaking even.

   Kenny runs to his father with tears in his big brown eyes. "Dad, why don't the customers like the tea I am making. There must be something wrong with it. There is something causing this effect. But I can't understand what it could be! Please help me?"

   Kenny's father looks sad, also. Like Kenny, he was hoping to be able to shoot baskets every evening after dinner. "Wait, son," he says. "I know some really excellent students who are now experts in using a quality control technique called **Fishbone Analysis.** Let me ask them if they can help us."

   Kenny's father picks up his handphone and calls YOU.

   (i) Draw an **Ishikawa Diagram** to identify and categorize the possible causes that could be reducing the quality of Kenny's iced lemon tea and affecting the success of his venture (15 marks); and,

   (ii) write a paragraph discussing one (1) effective action that Kenny and his father could take to eliminate the problem (5 marks).

3. Compare and contrast the concepts of aesthetics and conformance within David Garvin's product quality dimension framework. (10 marks)

4. "When we talk about quality control, the concept known as *sharpen the saw* is clearly the most important of the Seven Habits of Highly Effective People, proposed by Dr Stephen Covey," said the lecturer. Discuss this statement. (10 marks)

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